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RESPONSE AND COMMENTS FROM FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION TO U S NAVY TECHNICAL COMMENTS TO FINAL REMEDIAL INVESTIGATION REPORT ADDENDUM 1 SITE 40 NAS PENSACOLA FL

2/28/2003

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Florida Department of Environmental Protection
Response to Technical Comments
Addendum I (Human Health) of the Final Remedial Investigation Report – Site 40 – Bayou Grande, Naval Air Station, Pensacola, Florida.
February 28, 2003

Addendum 1

In 1998, prey fish (Pinfish and Killifish) were collected from Site 40. A baseline risk assessment prepared using these data identified DDD, DDE, aldrin, PCBs (Aroclor-1260), dieldrin, lindane, and gamma-chlordane as compounds that pose a potential risk to subsistence fishermen. Addendum 1 of the Remedial Investigation Report presents a site-specific risk assessment of these compounds and mercury. The report concludes that carcinogenic risks associated with the ingestion of contaminated fish at Site 40 are within acceptable limits, and that mercury does not pose a significant health hazard. However, the rationale for selection of fish ingestion rates and the concentrations of contaminants in fish used by EnSafe to calculate risks is flawed. When more appropriate values are used, higher risks are obtained, including some values above acceptable limits for both the U.S. EPA and FDEP. This is explained in the following comments.

Comment 1:

The downward revision of recreational fisher fish consumption rates is not justified and needs to be revised. The report states on page 7 that fish ingestion rates used in the analysis are those presented in the 1997 USEPA's *Exposure Factors Handbook* (EFH) as representative of recreational fishermen in the Gulf of Mexico (26.1 g/day, corresponding to the 95th percentile; and 7.2 g/day, corresponding to the mean). However, a discussion presented in page 8 corrects these values downward by factors of 3 and 2 (a combined factor of 6), and calculates fish consumption values of 4.3 and 1.2 g/day for the 95th percentile and mean values, respectively. EnSafe justifies these adjustments by asserting that "The USEPA EFH also states that only 33% of the fish consumed by recreational fishermen is actually caught locally. The rest is bought commercially." In addition it contends, "...the USEPA reports that only between 25 to 50% of whole fish is edible." Our review of the EFH reveals that indeed these factors are discussed, but that they are <u>already considered</u> in the recommended values of 26.1 and 7.2 g/day. These fish consumption estimates were developed using data from the National Marine Fisheries Services. They are based on interviews of recreational fishermen who had just completed their fishing trip and whose catch was then weighed. As a consequence, they are solely based on fish recreationally caught and dividing them by 3 is therefore not required. These data are then used by the USEPA to derive the fish consumption estimates. The USEPA calculates a daily fish consumption rate for recreationally caught fish by inputting the fishing frequency reported by the angler, by assuming the angler will be sharing the catch with other people (dividing by a factor of 2.5), and by assuming the edible part constitutes only 50% of the fish weight. This last adjustment obviates the need for dividing the fish consumption estimate by 2, the other downward revision proposed by EnSafe. Therefore, the values of 26.1 and 7.2 g/day should be used, without revision, to estimate RME and central tendency exposure scenarios for recreational fishers.

Response:
A technical memorandum (attached) was written to show RME calculations for the recreational fishing scenario based on revised ingestion rates and other revisions to the exposure calculations. The ingestion rate of 26 g/day was used to estimate tissue intake for recreational fishermen, based on EPA's 1997 Exposure Factors Handbook.

Comment 2:
Fish consumption rates for subsistence fishers should also be revised. In Section 4.2 of the report, EnSafe acknowledges the recommended fish ingestion value for subsistence fishers presented in the EFH (170 g/day for the 95th percentile), but points out this value is based on survey data from Native American subsistence fishers in the Pacific Northwest. EnSafe argues that these values are not representative of Native American fishers in general, and on this basis rejects the value. They cite studies indicating that Native American recreational fishers have 50 to 100% higher fish intake rates than other anglers and use this information to estimate a subsistence fisher fish consumption rate of 26 g/day x 2 = 52 g/day. Again, EnSafe incorrectly adjusts this value by dividing it by 2 to reflect the proportion of edible fish, ending up with a value of 26 g/day. EnSafe appears to have confused the objective of developing an intake value for subsistence fishers with developing a value for recreational Native American fishers. Unless there is some reason why subsistence fishers in the vicinity of this site (regardless of ethnicity) are expected to have a different fish ingestion rate than that presented in the EFH, the EFH assumption (170 g/day) should be sued when assessing risks to these receptors.

Response:
Ingestion rates were revised in the technical memorandum. Subsistence fishing scenarios were not included in the memorandum.

Comment 3:
EnSafe has assumed that fish caught by fishermen are equally exposed to contaminants in the whole extension of Bayou Grande, of which Site 40 represents only 32%. Other reviewers have commented on the lack of data to support an assumption that fish use different areas of the Bayou equally; and pointed out that Site 40 may in fact attract fish. This is a source of uncertainty that can only be addressed by direct sampling of sport fish species. In lieu of those data, the only defensible approach is to assume fish spend 100% of the time at Site 40.

Response:
The site foraging factor was revised in the technical memorandum. Fish were assumed to be more attracted to the Site 40 area, so the site foraging factor was doubled. A value of 0.64 was used instead of 0.32. See Section 3 and Table 3 in the technical memorandum.

Comment 4:
The document suggests the PCB contamination at the site is not due to Site 40, but to conditions prevalent in the general area around Site 40. This assertion may be supported by background PCB data from a nearby area unaffected by other known or potential point sources. We do not concur with the USEPA recommendation that data from South Carolina be used as a site-specific background PCB concentration for Site 40.

Response:
A literature search was performed to obtain PCB fish tissue data from reference areas. This information was summarized in the technical memorandum (See Section 2). PCBs in fish tissue collected near Site 40 were higher than PCBs in tissue collected from reference areas.